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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,540	02/09/2004	Ricky Smith	14374.107	3131
22913	7590	05/01/2006	EXAMINER	
WORKMAN NYDEGGER (F/K/A WORKMAN NYDEGGER & SEELEY) 60 EAST SOUTH TEMPLE 1000 EAGLE GATE TOWER SALT LAKE CITY, UT 84111			KIKNADZE, IRAKLI	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 05/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/776,540	<b>Applicant(s)</b> SMITH, RICKY	
	<b>Examiner</b> Irakli Kiknadze	<b>Art Unit</b> 2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12, 15, 16 and 19-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9 and 20-39 is/are allowed.
- 6) ☒ Claim(s) 1-9, 33 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. In response to the Office action dated November 21, 2005 the Amendment has been received on February 22, 2006.

Claims 1, 6, 7, 10-12, 20, 21, 25, 29 and 32 have been amended.

Claims 5, 13, 14, 17 and 18 have been canceled.

Claims 33-40 have been newly added.

Claims 1-12, 15, 16, 19-40 are currently pending in this application.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 22, 2006 has been entered.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

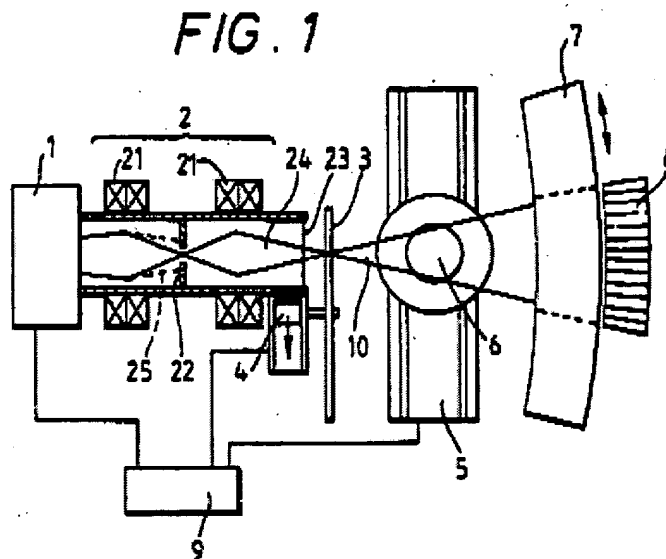
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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 10, 11, 16, 19 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamata et al. (US Patent 5,222,114).

With respect to claims 10 and 40, Kamata teaches a cathode head suitable for use in an x-ray device and comprising (Fig.1):

a magnetic (capable of being magnetized) emitter block (2);



an emitter (an electron beam generator (1)) attached to the emitter block (2) and configured to generate electrons for an electron beam (24) that defines a focal spot (column 7, lines 51-60); and

means for facilitating focal spot control (a plurality of magnet coils (21), a diaphragm or aperture (22) and a controller (9)) (column 8, lines 8-20), wherein the means generates a magnetic field with a magnetic flux density having flux lines that are

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substantially perpendicular to a direction of travel of the electron beam (24) (column 8, lines 34-43).

With respect to claim 11, Kamata teaches that the means for facilitating focal spot control adjusts a position (size) of a focal spot on a target (3) (column 8, lines 34-43).

With respect to claim 16, Kamata teaches that focal spot control acts on the electron beam (24) in a location proximate the emitter (1) (Fig.1).

With respect to claim 19, Kamata teaches that the means for facilitating focal spot control cooperates with the emitter block (2) to create a magnetic field through which at least a portion of the electron beam passes (Fig.1; column 8, lines 7-12 and 34-43).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamata et al. (US Patent 5,222,114) as applied to claim 10 above, and further in view of Mann (US patent 4,064,352).

With respect to claims 12 and 15, Kamata teaches claimed invention except that the means for facilitating the focal spot control: enables at least lateral adjustments to a

position of the focal spot and implements an adjustable deflection of the electron beam. Mann teaches electron beam spot control, wherein "the adjustable magnetic pole pieces on the inside of the electron beam path served to control the magnetic lateral focusing force tending to decrease the spot size of the beam at the target, it is desired to provide a greater control over the beam spot size and more particularly to impart an additional lateral defocusing force that can be preferably controlled or adjusted to derive a wider range of control or adjustment over the beam spot size" column 1, lines 39-55). It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the electron beam spot control arrangement as suggested by Mann in the apparatus of Kamata, since such a modification would provide user with a greater control over the beam spot size and more particularly to impart an additional lateral defocusing force that can be preferably controlled or adjusted to derive a wider range of control or adjustment over the beam spot size, so that the diameter of the x-ray beam to be generated by the target can be controllably reduced. As a result, a test object can be analyzed at a high resolution.

***Allowable Subject Matter***

7. Claims 1-9 are 20-39 are allowed.
8. The following is a statement of reasons for the indication of allowable subject matter:

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With respect to claims 1 and 29, prior art fails to teach or make obvious a cathode head suitable for use in the x-ray device comprising at least one magnetic element that defines an opening within which a portion of an emitter is positioned as claimed including all of the elements of claims 1 and 29. Claims 2-9, 30-39 and 33 are allowed by virtue of their dependence.

With respect to claim 20, prior art fails to teach or make obvious an x-ray device, comprising a cathode head comprising at least one magnetic element that defines an opening within which a portion of an emitter is positioned as claimed including all of the elements of claim 20. Claims 21-28 and 34 are allowed by virtue of their dependence.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Dumitrescu et al. (US Patent 5,224,143), Chidester et al. (US Patent 6,438,207 B1), Evain et al. (US Patent 5,125,019) and Lemaitre et al. (US Patent 6,968,039 B2) teach the focal spot position adjustment systems for the x-ray imaging tubes.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

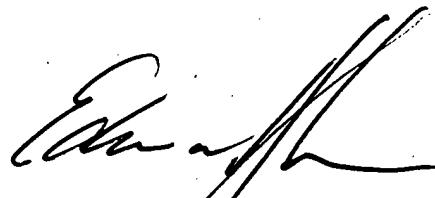
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze  
April 26, 2006

IK



EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER